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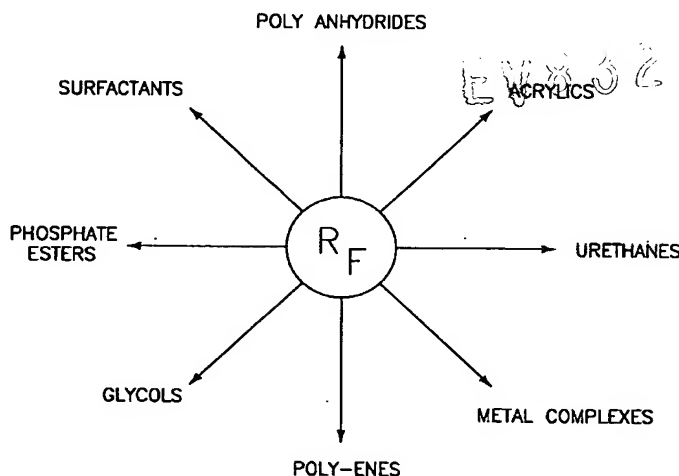
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(54) Title: PRODUCTION PROCESSES AND SYSTEMS, COMPOSITIONS, SURFACTANTS, MONOMER UNITS, METAL COMPLEXES, PHOSPHATE ESTERS, GLYCOLS, AQUEOUS FILM FORMING FOAMS, AND FOAM STABILIZERS



(57) Abstract: Production processes and systems are provided that include reacting halogenated compounds, dehalogenating compounds, reacting alcohols, reacting olefins and a saturated compounds, reacting reactants having at least two $-CF_3$ groups with reactants having cyclic groups. R_F compositions such as R_F -intermediates, R_F -surfactants, R_F -monomers, R_F -monomer units, R_F -metal complexes, R_F -phosphate esters, R_F -glycols, R_F -urethanes, and/or R_F -foam stabilizers. The R_F portion can include at least two $-CF_3$ groups, at least three $-CF_3$ groups, and/or at least two $-CF_3$ groups and at least two $-CH_2-$ groups. Detergents, emulsifiers, paints, adhesives, inks, wetting agents, foamers, and defoamers including the R_F -surfactant composition are provided. Acrylics, resins, and polymers are provided that include a R_F -monomer unit. Compositions are provided that include a substrate having a R_F -composition thereover. Aqueous Film Forming Foam ("AFFF") formulations are provided that can include R_F -surfactants and/or R_F -foam stabilizers are provided.

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